Design Course

Visual Elements

Basic and fundamental units of visual language

by
Prof. Ravi Poovaiah
IDC, IIT Bombay

Source:
https://www.dsource.in/course/visual-elements

1. Introduction
2. Points
3. Lines
4. Planes
5. Volume
6. Design Tools
7. Contact Details

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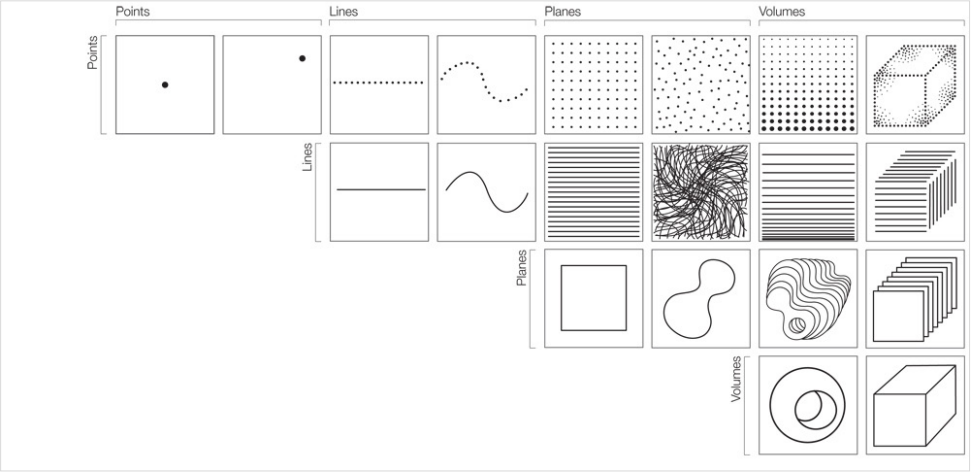
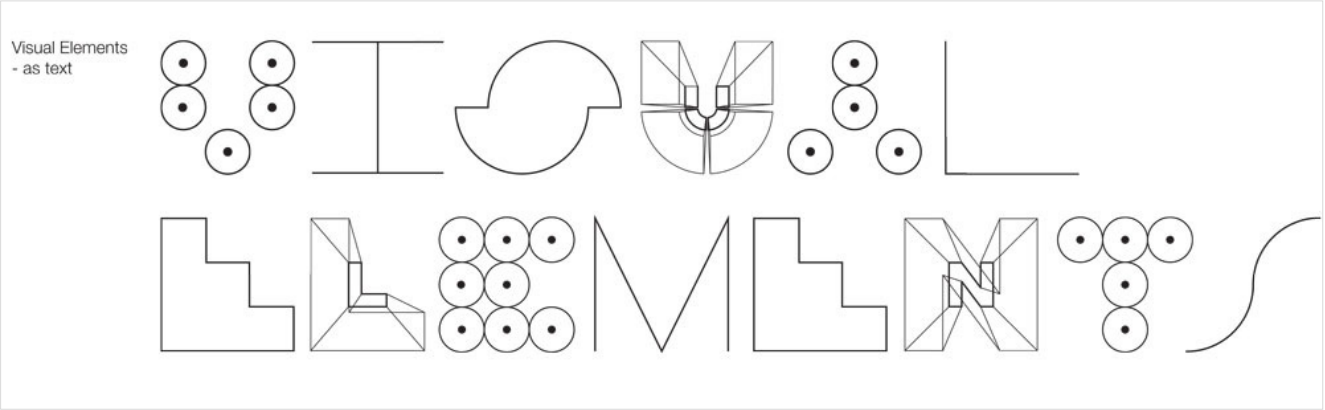
Introduction

The visual elements are points, lines, planes and volumes. These are the most basic elements from which the visual language is built up.

Spatially, a moving point gives rise to a line (the one dimension), a moving line moving in a direction other than its own intrinsic direction becomes a plane (the two dimensions) and a plane moving in a direction other than its own intrinsic directions becomes volume (the three dimensions).

Conceptually, we feel that there is a point at the intersection of lines, a line marking the boundary of a shape and that there are planes enveloping an object.





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https://www.dsource.in/course/visual-elements/points

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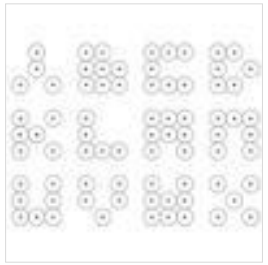
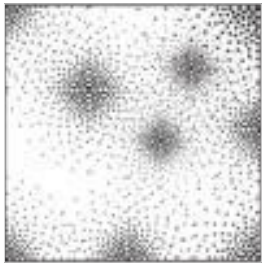
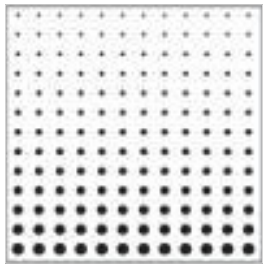
Points



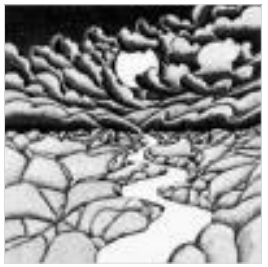
Point as Text



Notes - Annotation



Relationship



Example

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Source:
https://www.dsource.in/course/visual-elements/points/point-text

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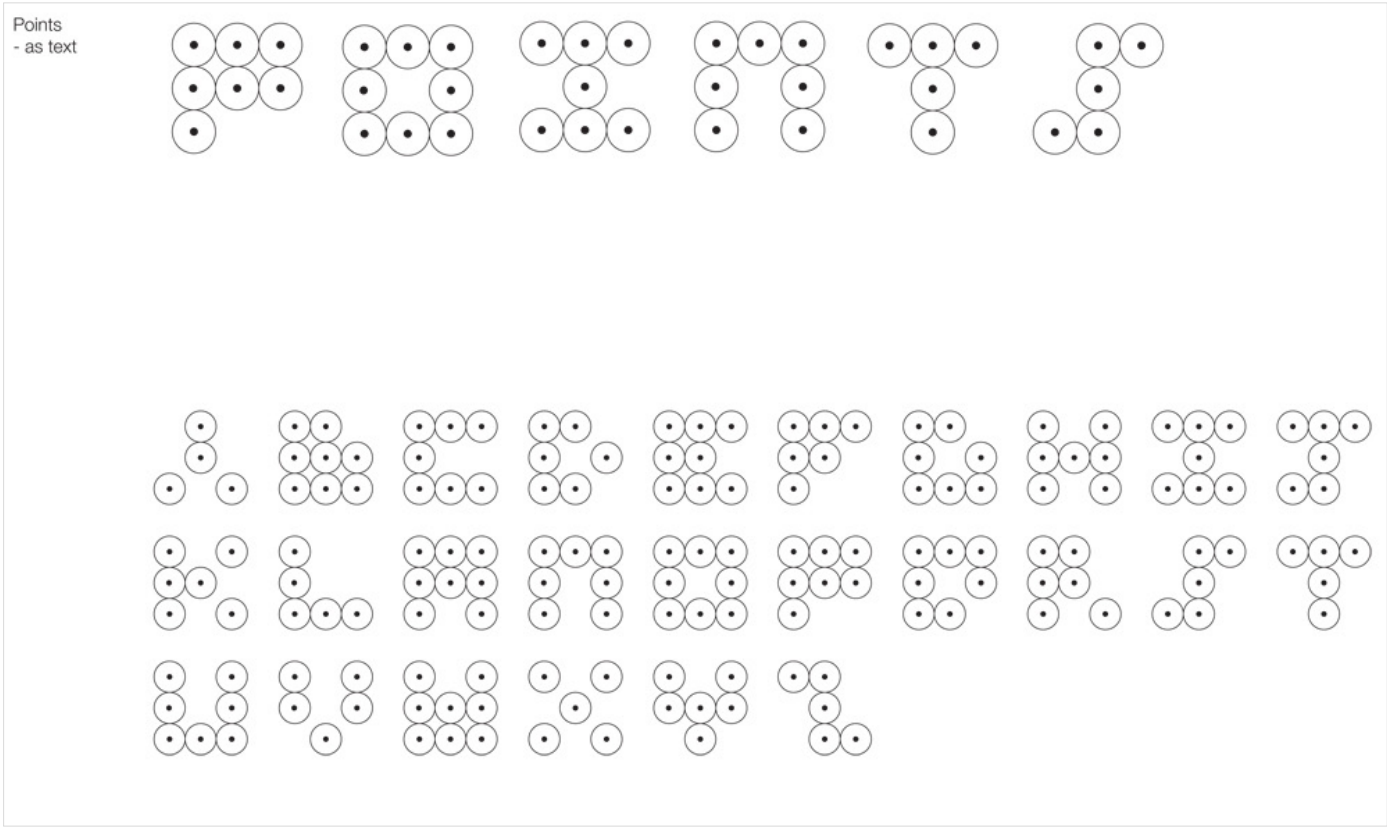
Point as Text



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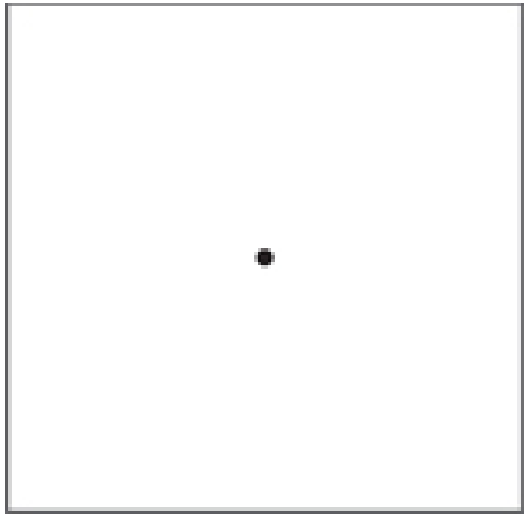
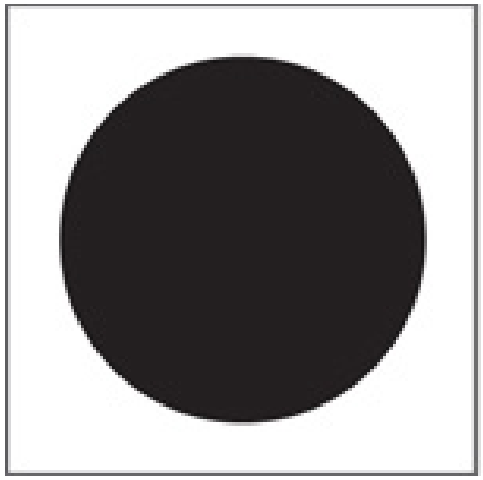
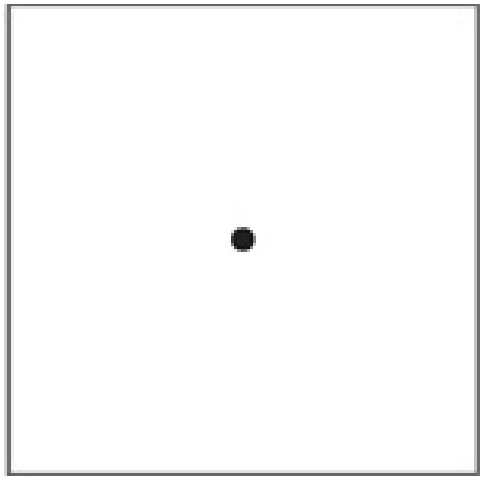
Notes - Annotation

Formal Aspects



We identify a point because of its smallness.





A point may appear fairly large when it is confined to a tiny frame of reference, but the same form may appear rather small as a 'point' when it is perceived in a much larger frame of reference.

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Conceptually, points are also perceived at places where there is a considerable change in direction of lines or when lines intersect or meet.

At a macro level, the shape of point can vary. It gets reduced to just a point when seen from far or in a larger frame of reference.

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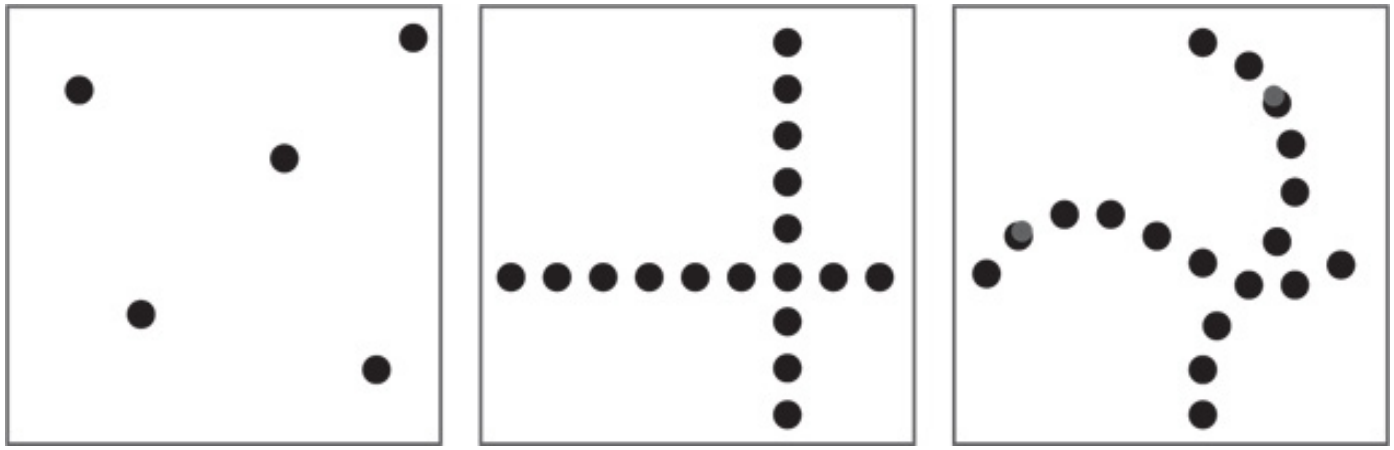
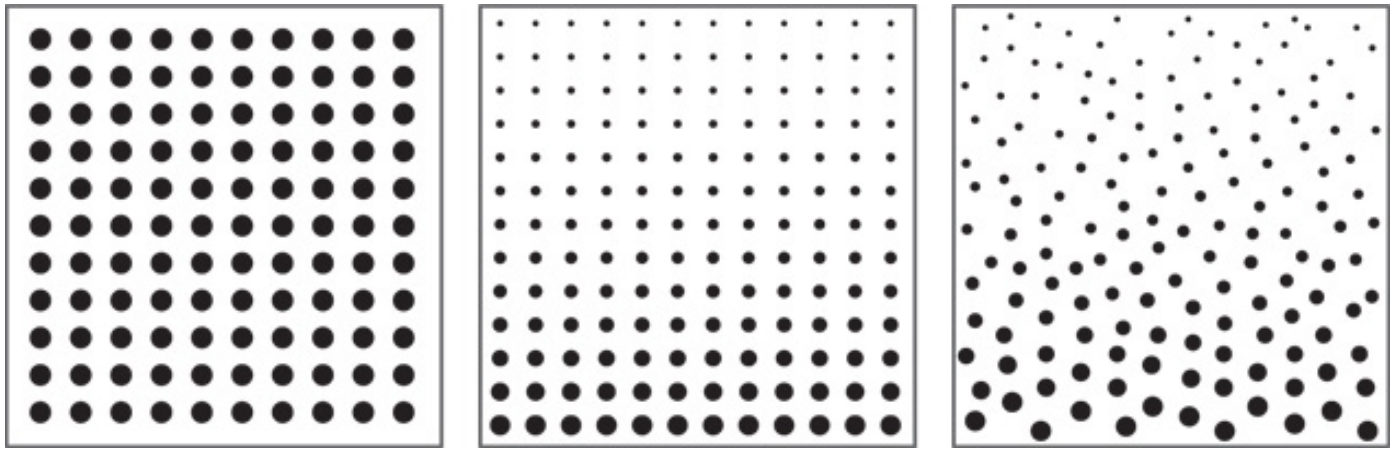


Points in a frame which are quite segregated from each other are perceived as different points. Points which are close to each other with a common directional relationship are perceived as a line.



Group of points having a two dimensional relationship are perceived as a plane.

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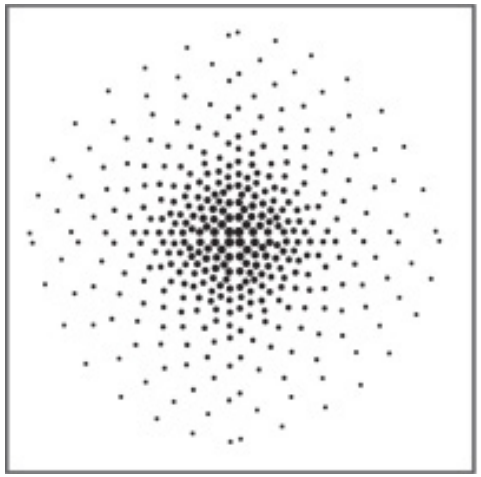
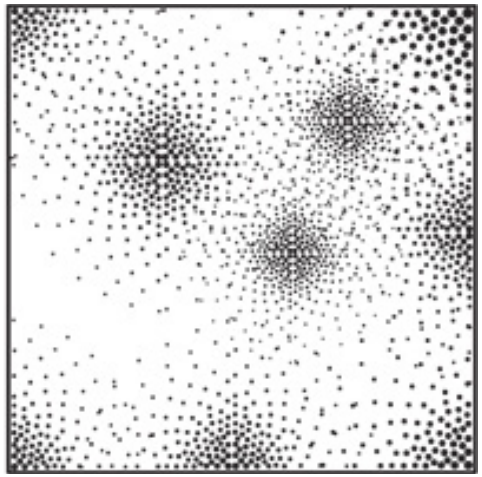
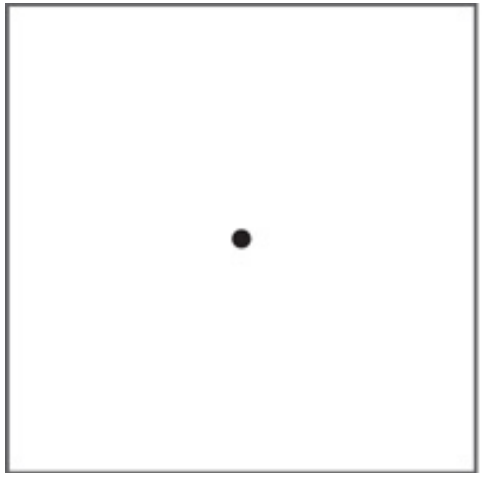




Repeated replication of points results in representation of textures and volumetric surfaces.

Semantic Aspects



A point indicates a position in space. An example of this is a point on a map representing a village.

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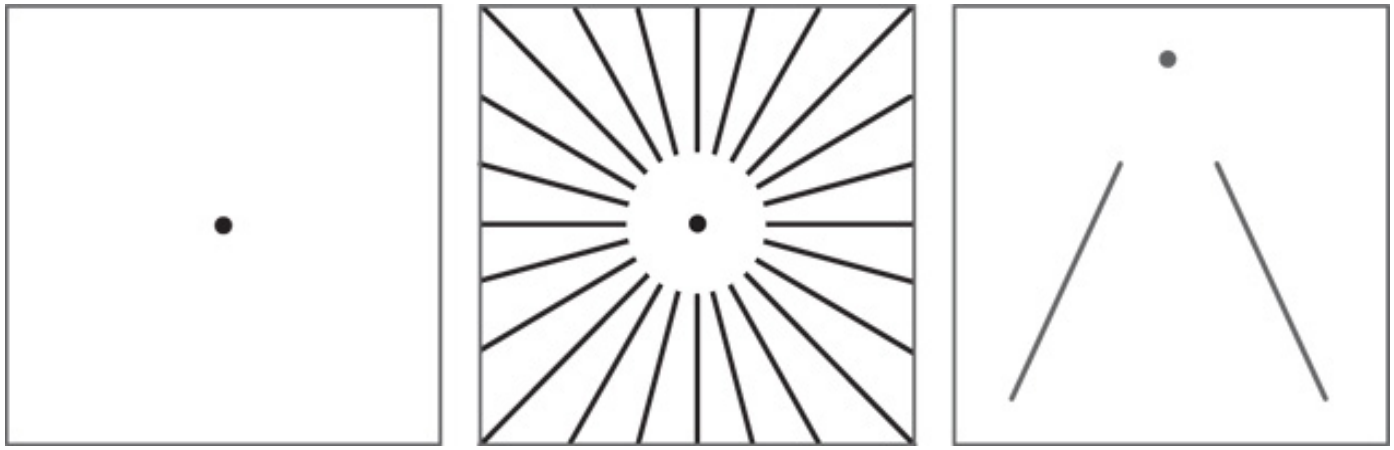
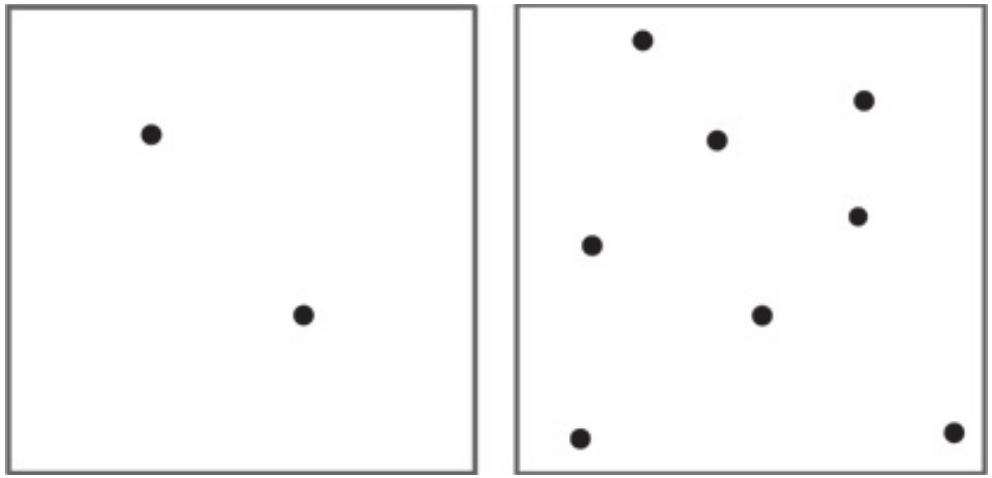


A point indicates focus of attention. It can act as a centre for converging forms or as a vanishing point within a perspective framework.



A point indicates a position in space. An example of this is a point on a map representing a village.

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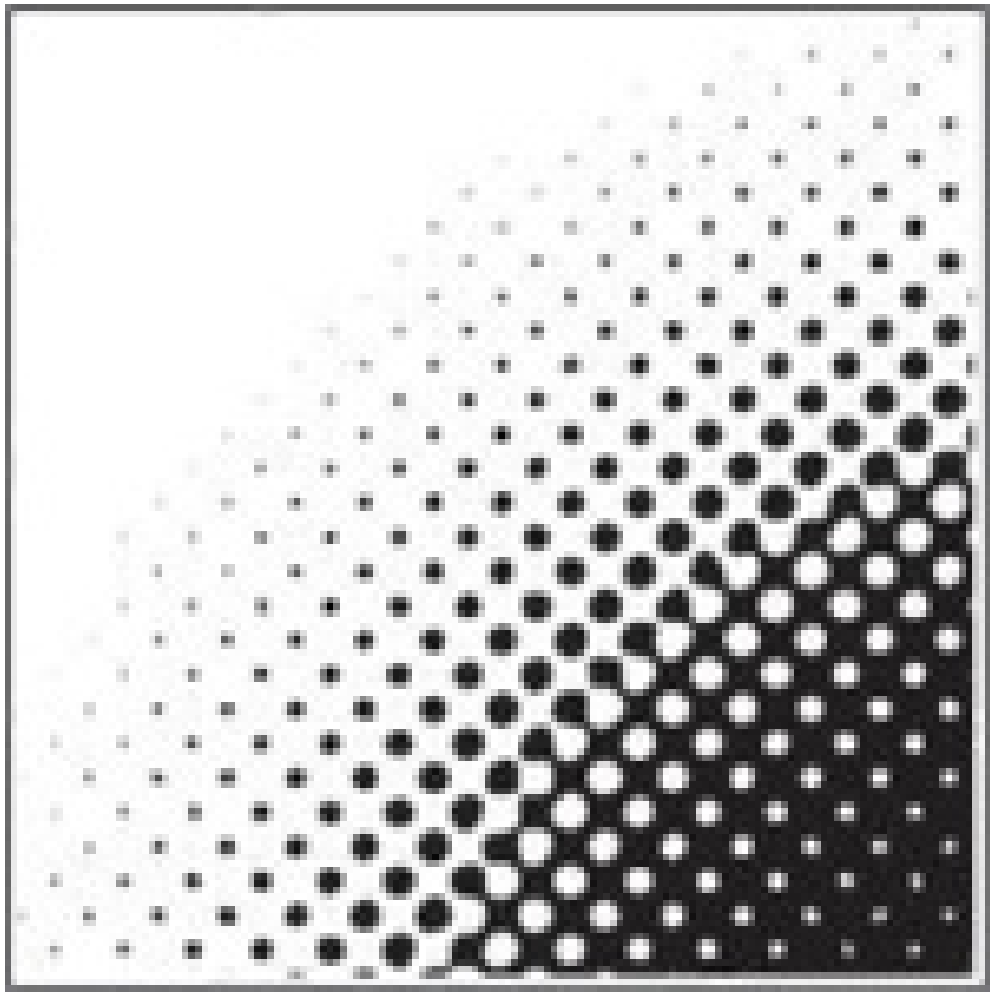
Practical Aspects



Points as pixels add together to represent images on printed surfaces and on computers, mobiles and television displays.

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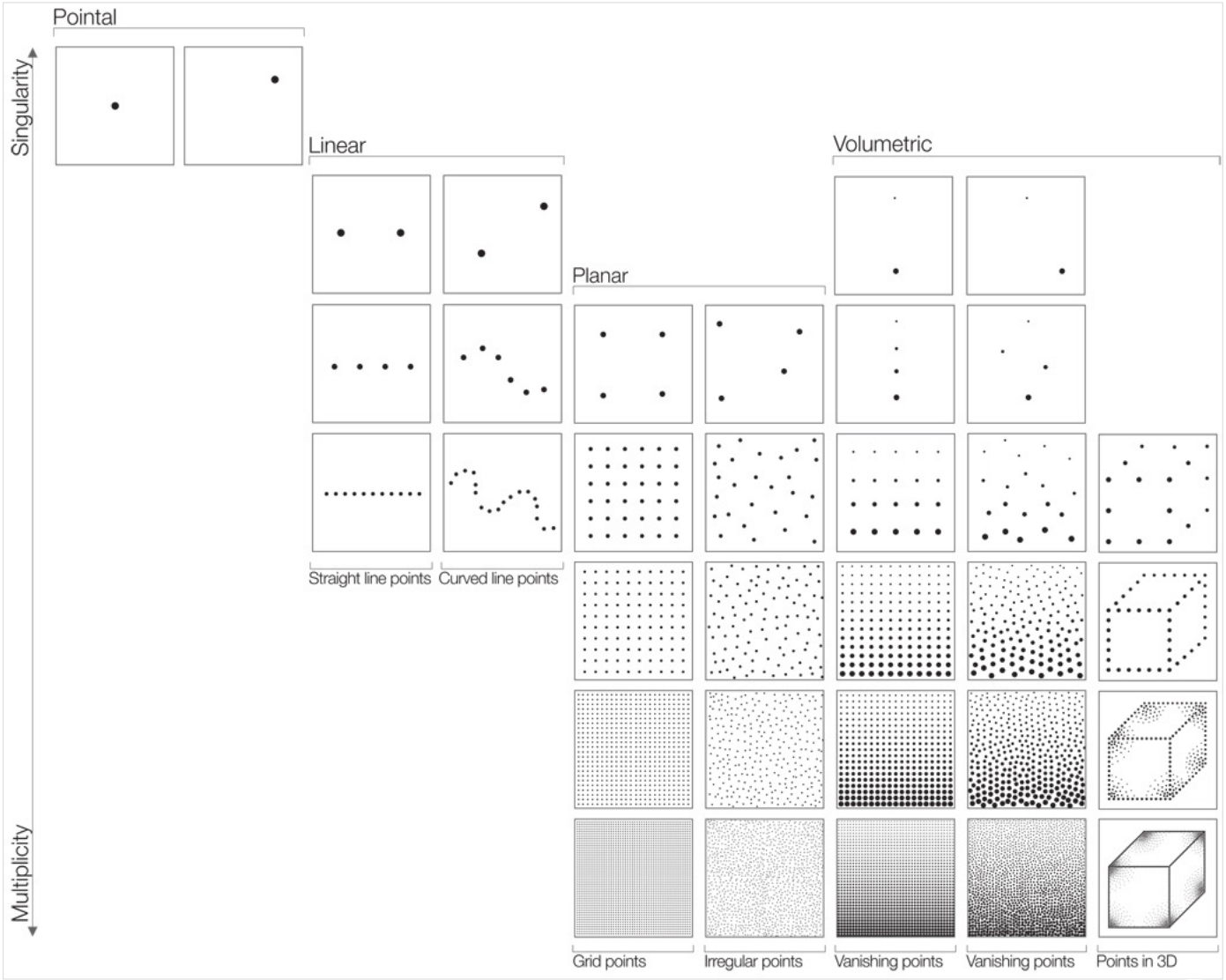
Relationship



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Example

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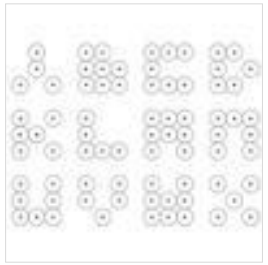
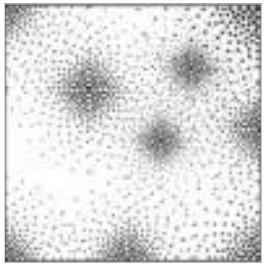
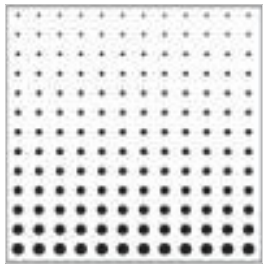
Lines



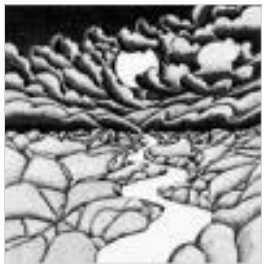
Text



Notes - Annotation



Relationship



Example

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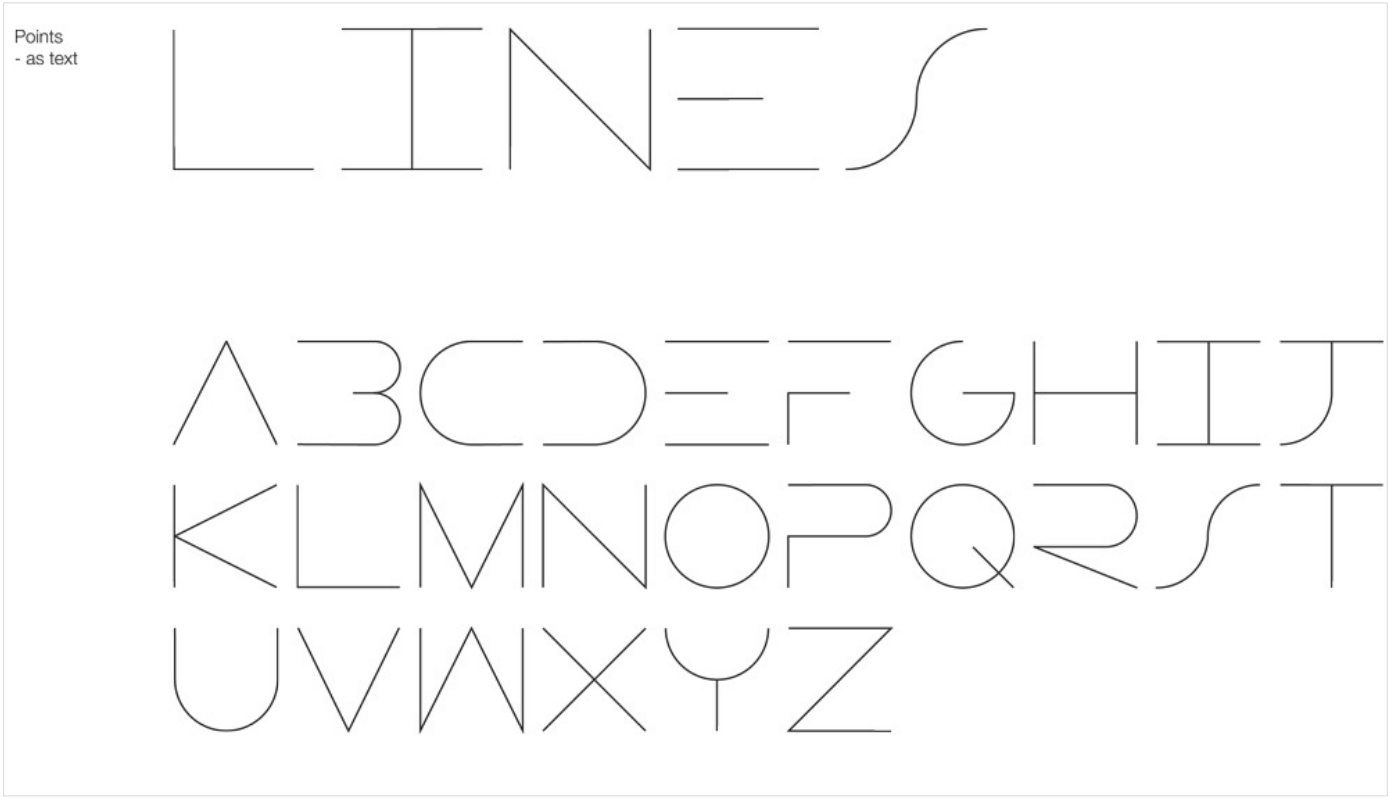
Text



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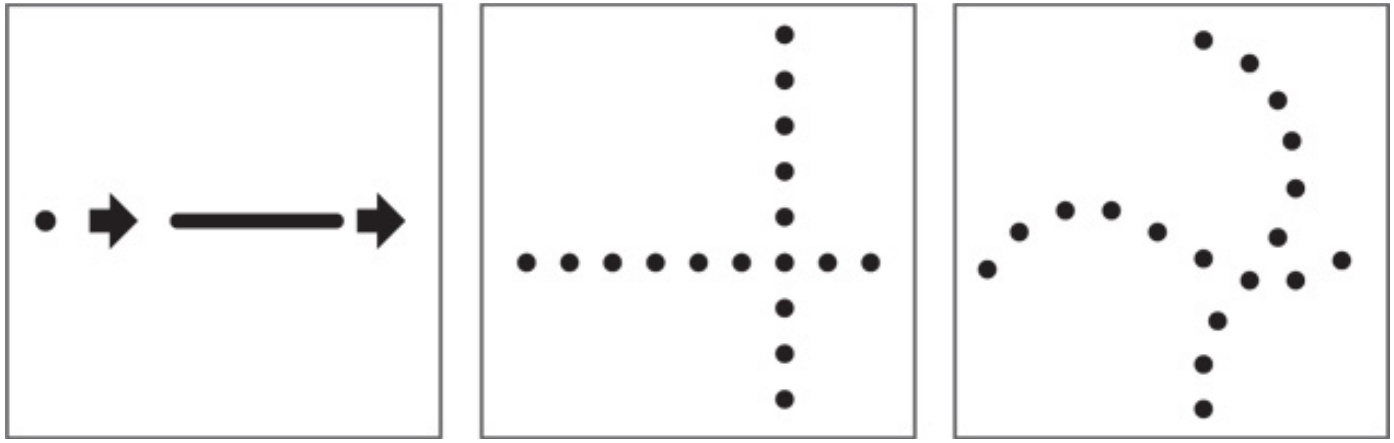
Notes - Annotation

Formal Aspects



A moving point gives rise to a line. Lines have one dimension - the length. The length is predominantly longer than its breadth. Points that are close to each other with a common directional relationship are perceived as a line.

A line can be straight, bent, curved, irregular or hand drawn.

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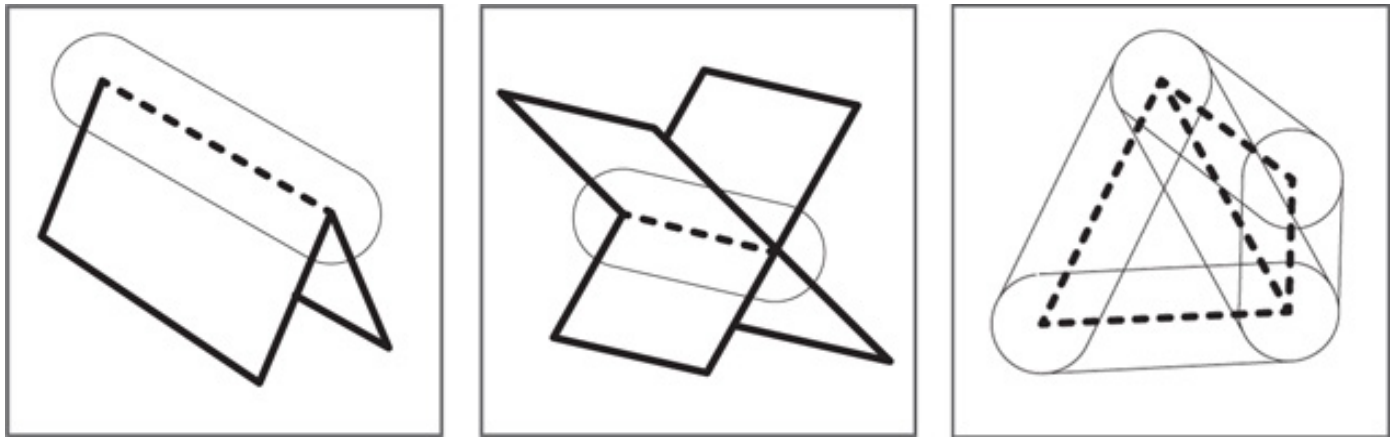

Conceptually, lines are also perceived at places where there is a considerable change in direction of planes or when planes intersect or meet.

At a macro level, the shape of the end of a line can vary.

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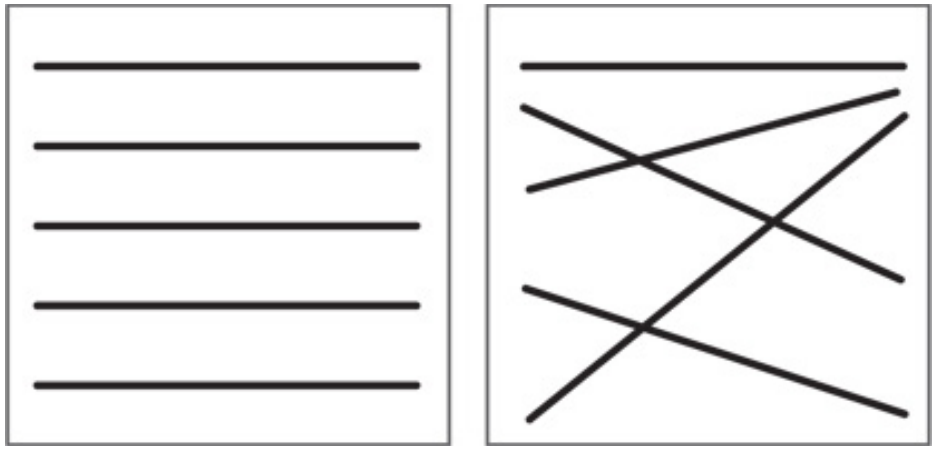

Lines in a visual field that are quite segregated or with different directions from each other are perceived as different lines.

Group of lines that are close to each other establish a 2-dimensional relationship and are perceived as a plane. Groups of lines having many common directional relationships are perceived as different planes.

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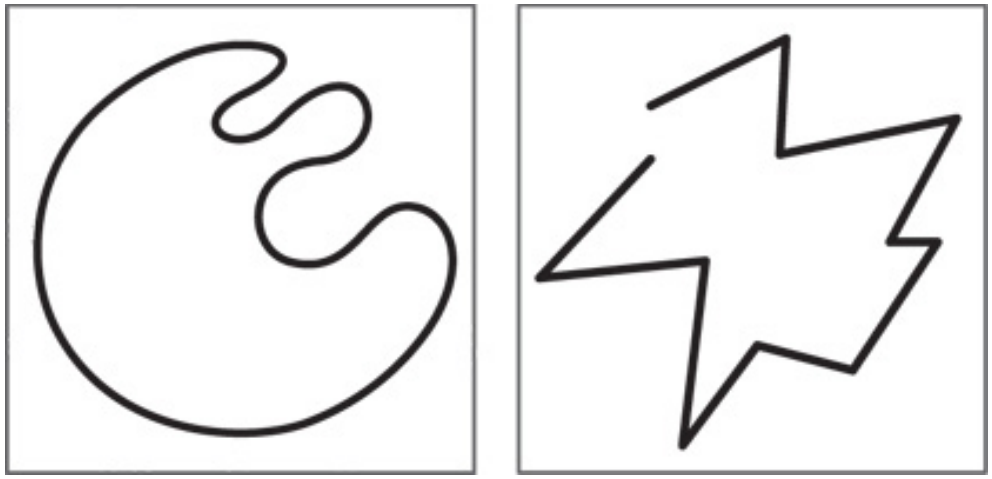
Repeated replication of lines results in representation of textures and volumetric surfaces. Changing the space between the lines or the thickness of the lines leads to the indication of depth.



Closed or almost closed lines give the perception of a planar surface.

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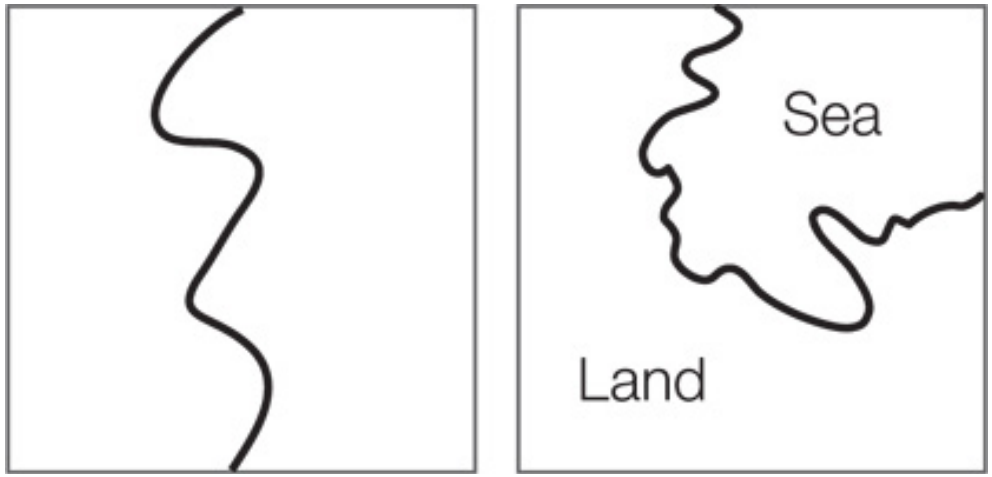
Semantic Aspects

Lines are 1-dimensional in nature and denote direction. An example of this is a line on a map representing a path or a route.



The linear structure of the line can be used to denote a boundary or a division.

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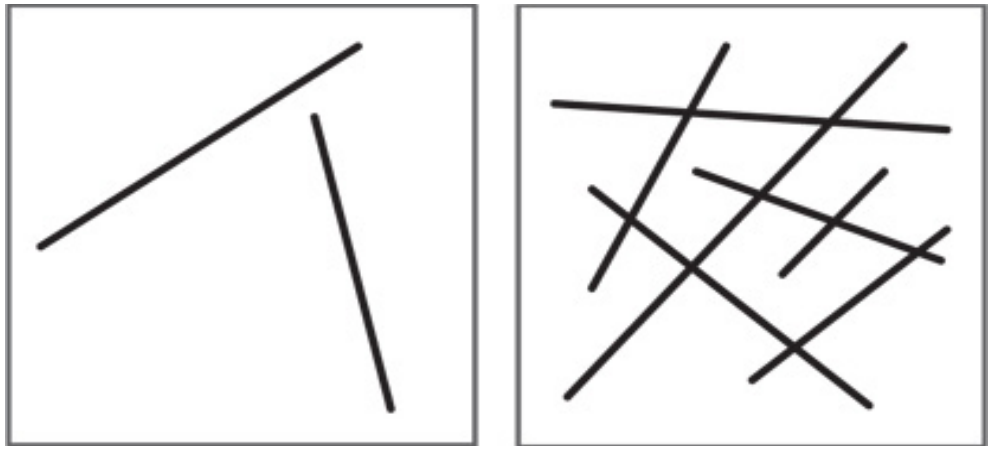
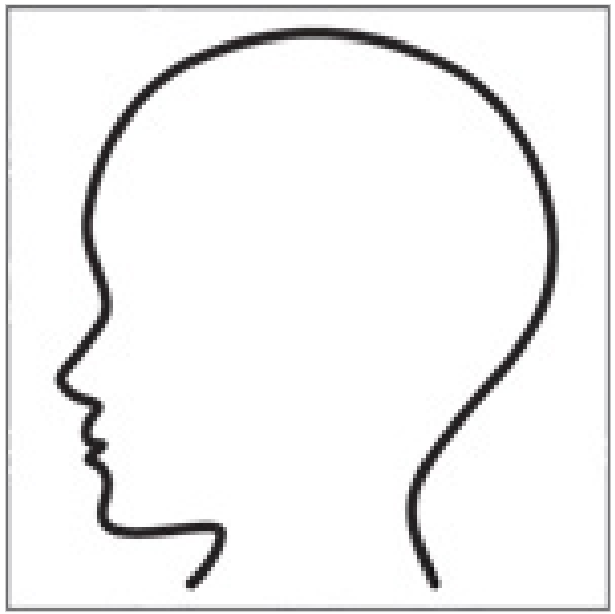


When there are two lines, there is an indication of direction and specific interaction between them. Freely used lines create a variety of energies and tensions.

Practical Aspects



The property of the line to be able to denote a boundary makes it useful for representing images in contours.

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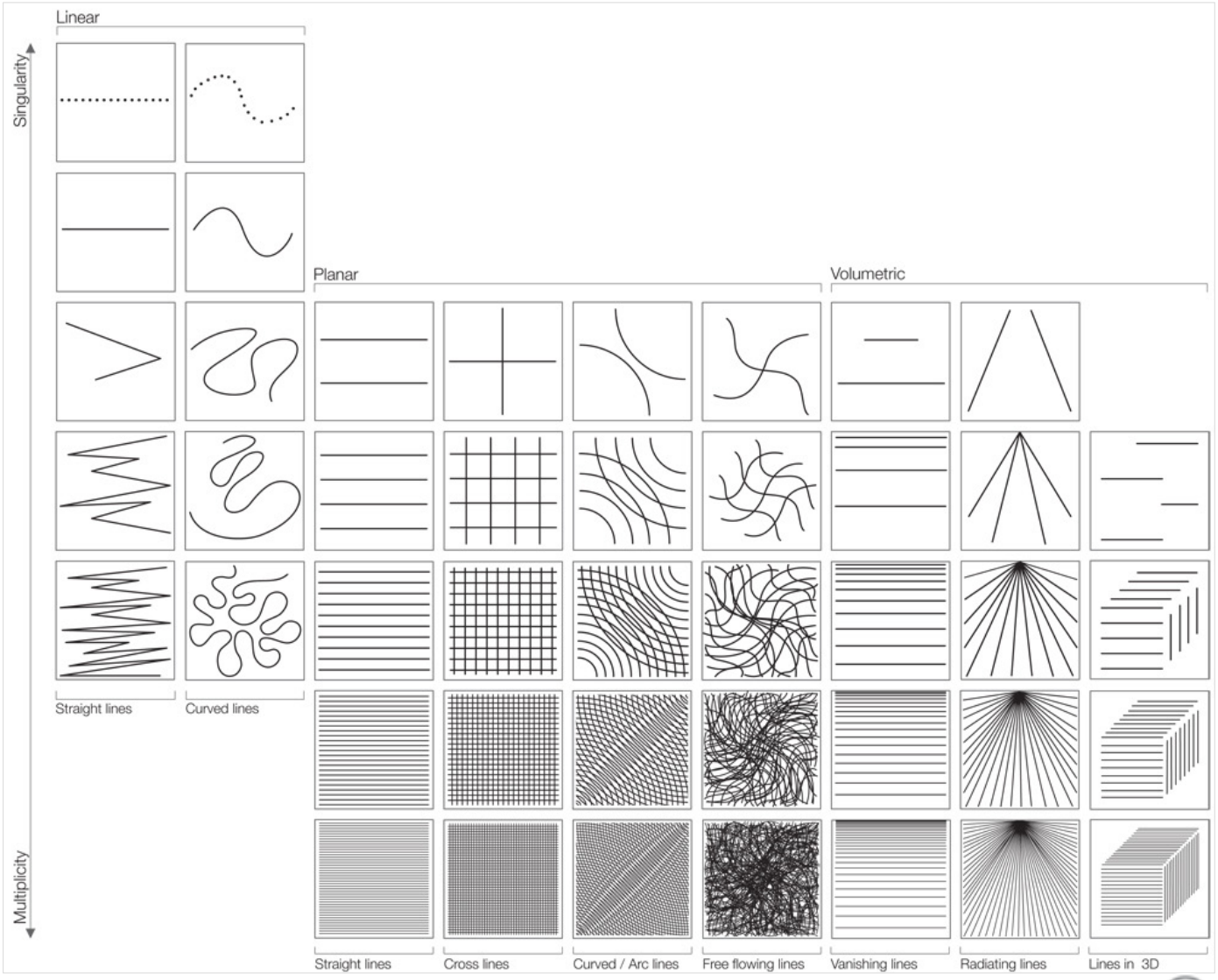
Relationship



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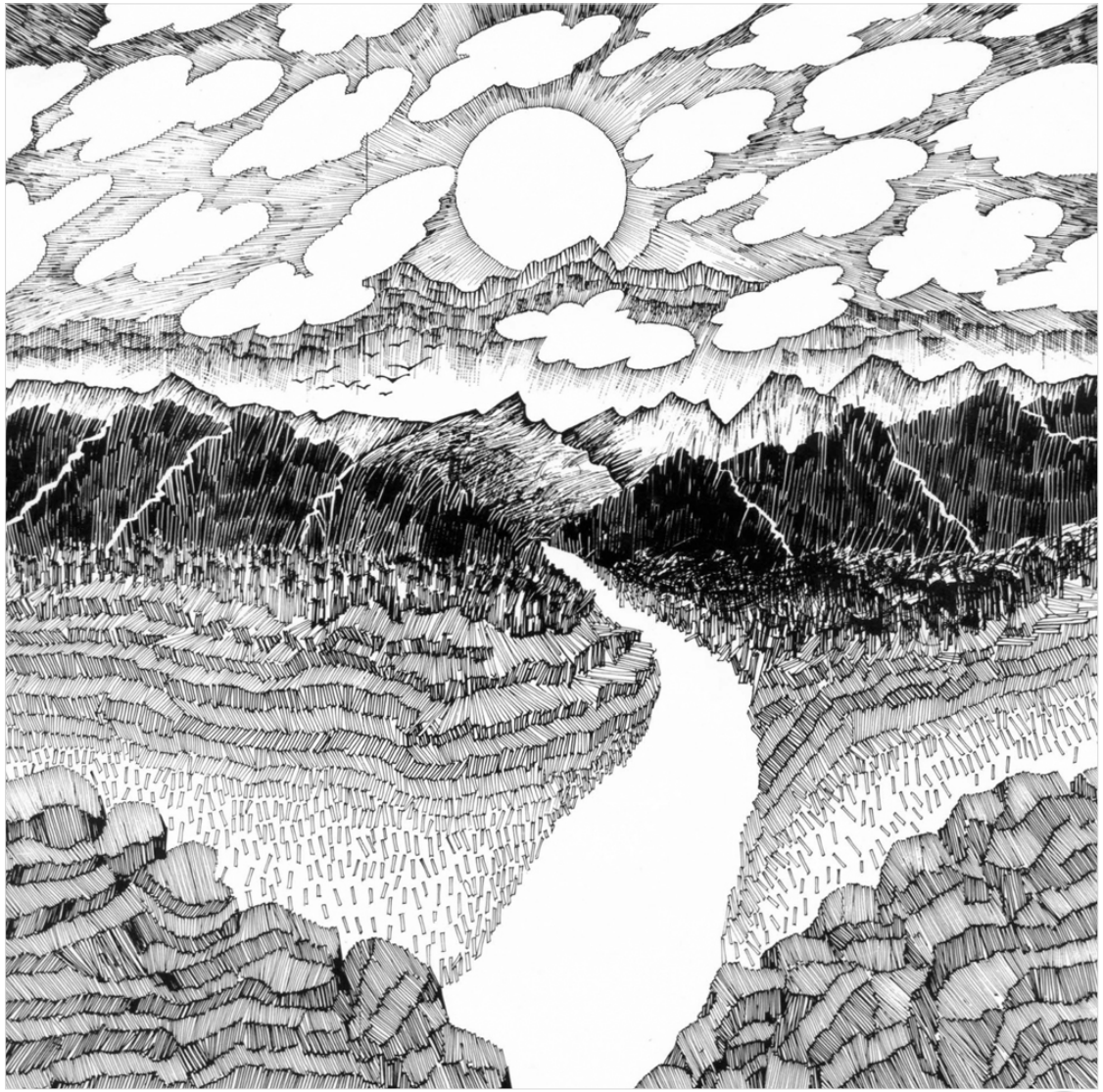
Example



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Visual Elements

Basic and fundamental units of visual language

by
Prof. Ravi Poovaiah
IDC, IIT Bombay

Source:
https://www.dsource.in/course/visual-elements/planes

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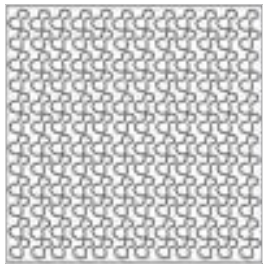
Planes

Text

Notes - Annotation



Relationship

Example

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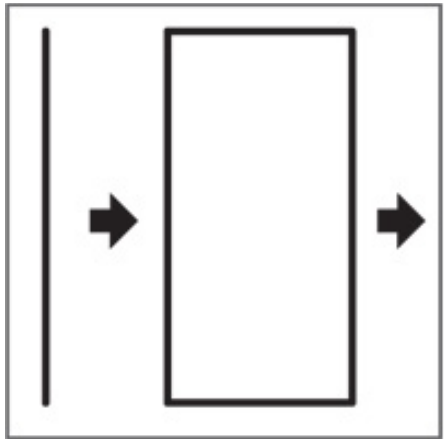
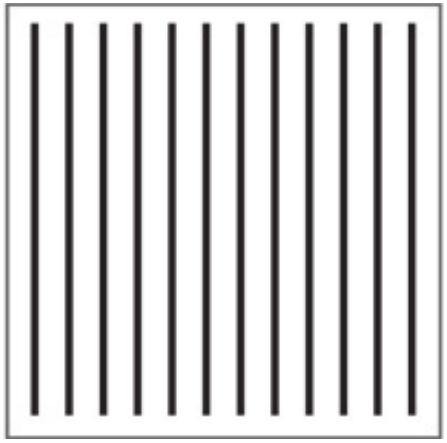
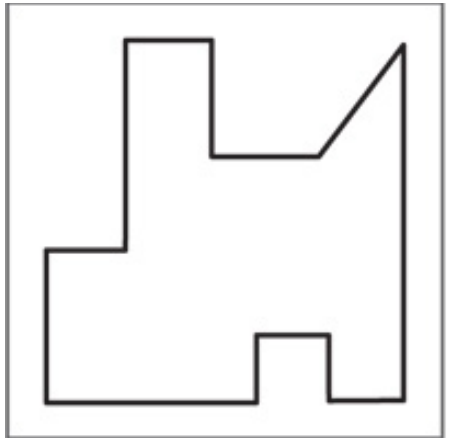
Notes - Annotation

Formal Aspects





A moving line, moving in a direction other than its own intrinsic direction gives rise to a plane. Planes have 2 dimensions - length and breadth. These are predominant compared to their thickness. Lines that are close to each other with a common directional relationship are perceived as a plane.



A planar form is bound by lines which constitute the edges of the plane. The characteristics of these lines and their interrelationships determine the shape of the planar form.
Planar forms can have a variety of shapes - geometric, organic, rectilinear, irregular or accidental.

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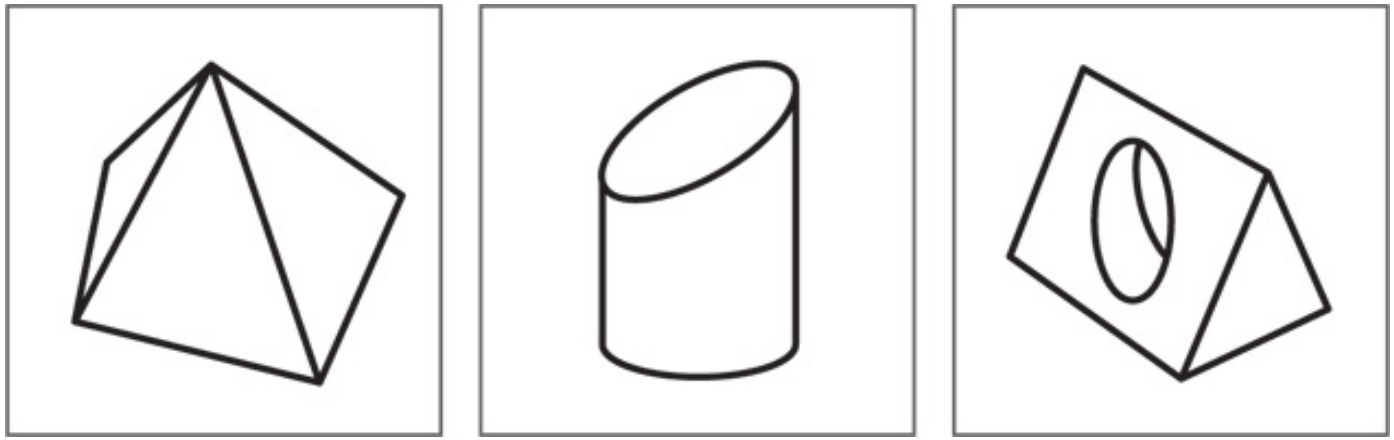
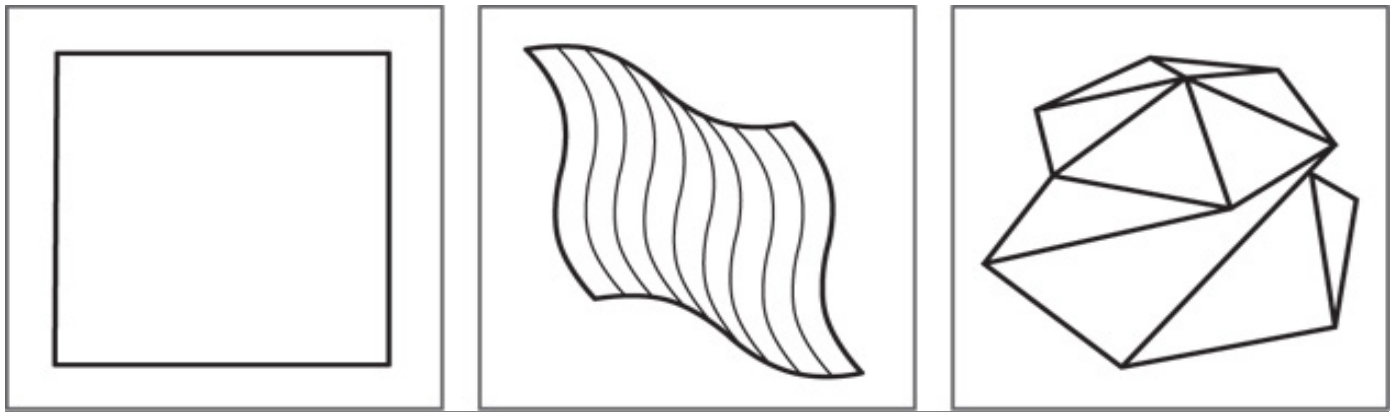


Conceptually, planes are also perceived at places where there is a considerable change in direction of the surface of volumes, when volumes are cut and when volumes intersect or meet.



A surface of a plane may be flat, curved or twisted.

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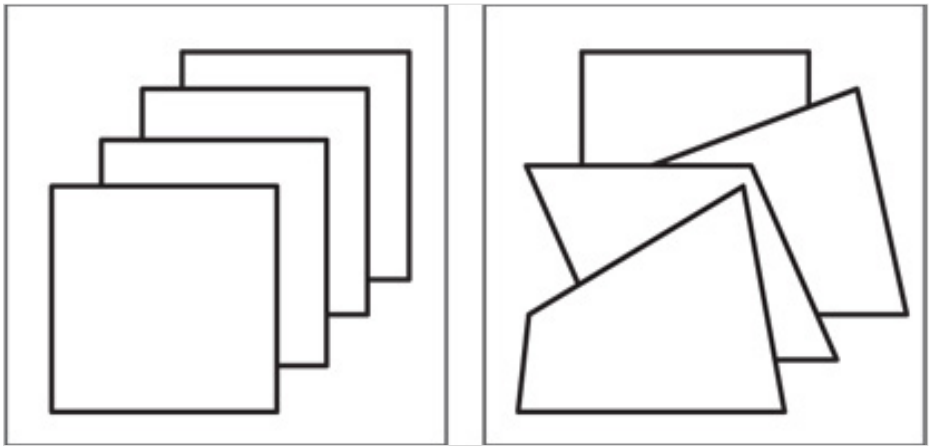
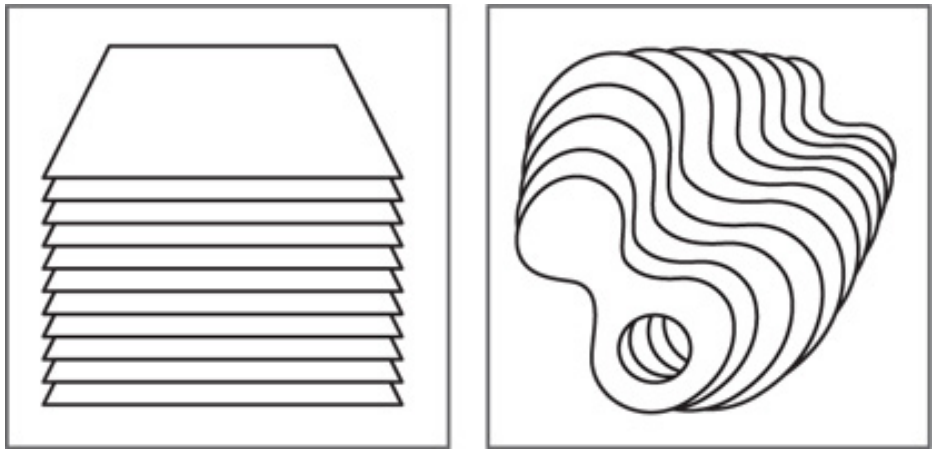


Planes in a visual field that are segregated or with different orientations from each other are perceived as different planes.



Group of planes that are close to each other with a 2-dimensional relationship are perceived as a volume.

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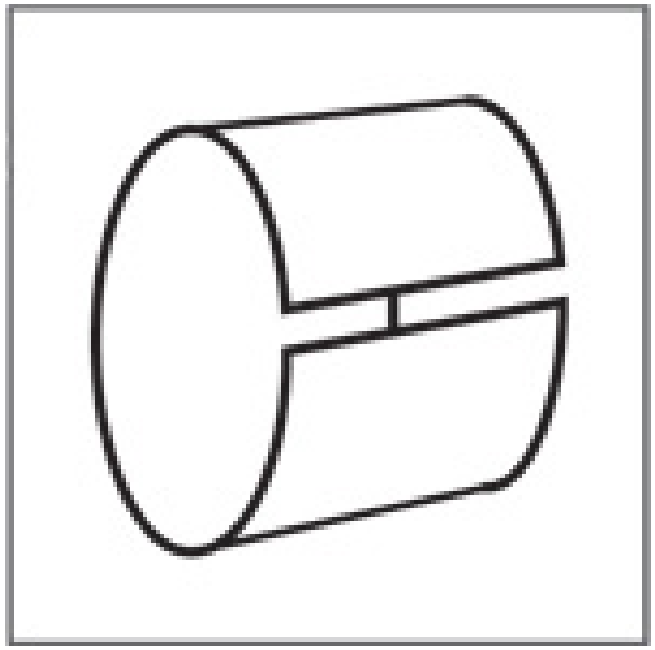
Planar forms can be represented by means of points, lines or by means of outlines.



Closed or almost closed plane is perceived as a volume.

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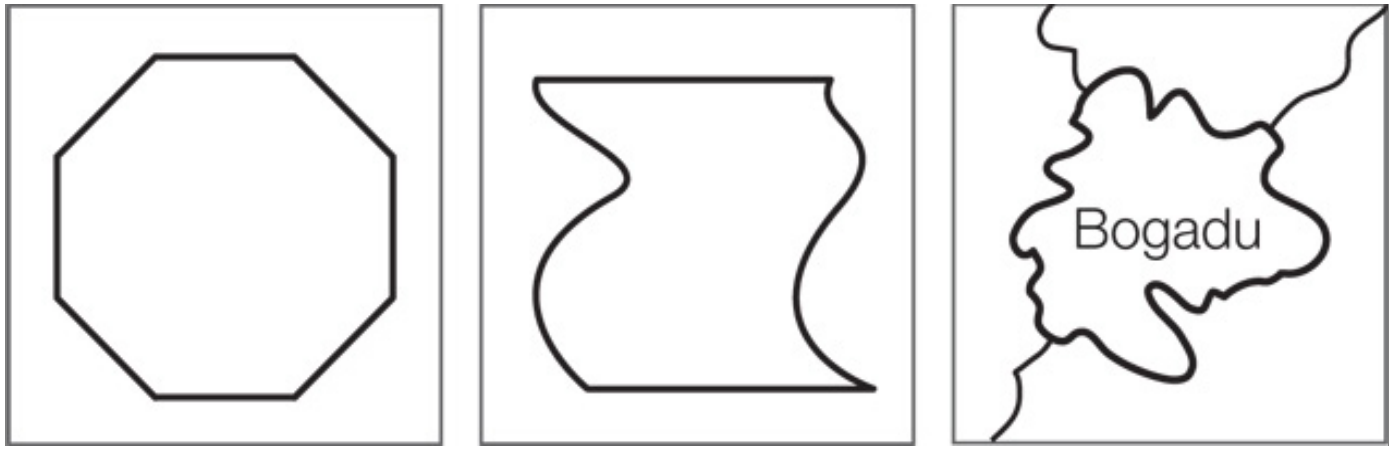
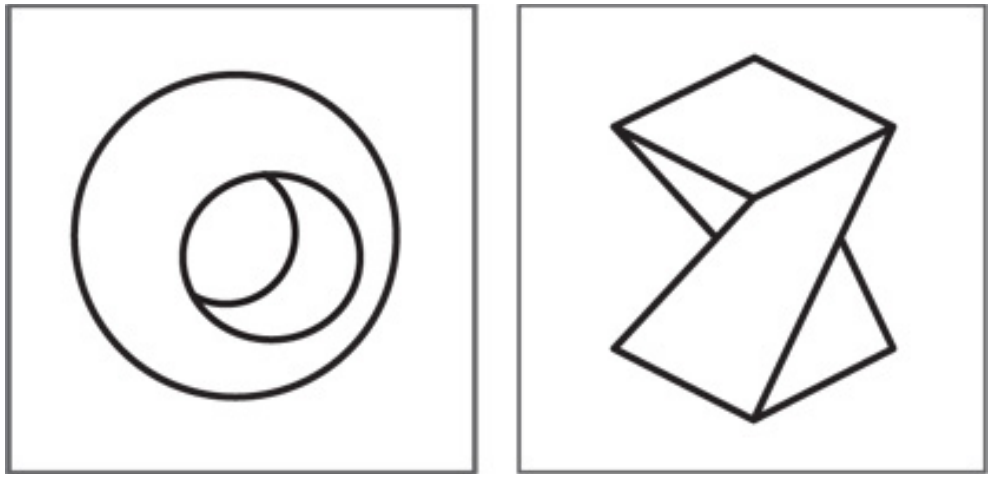
Semantic Aspects



Planes are 2-dimensional in nature and denote surfaces. An example of this is an area on a map representing a territory.



The planar structure of the plane can be used to wrap or envelop a surface.

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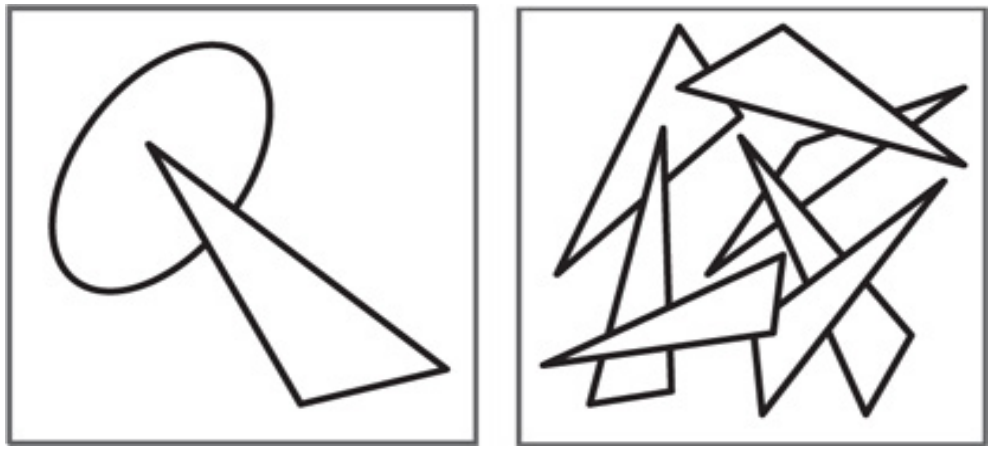
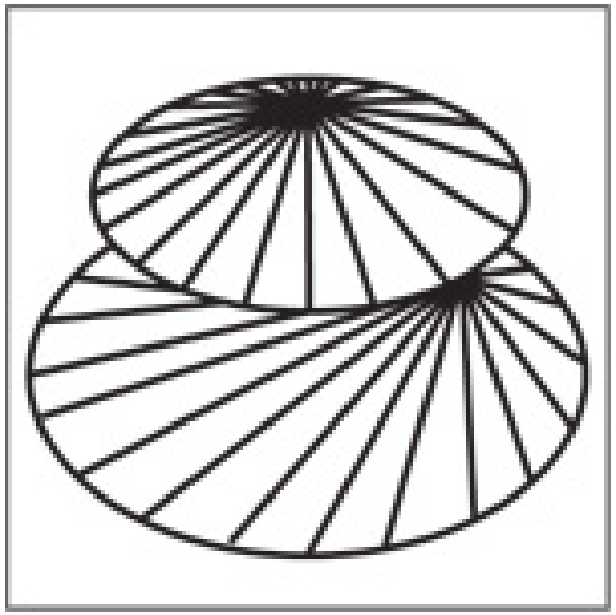


When there are two planes, there is a suggestion of direction and specific interaction between them. Freely used planes create a variety of energies and tensions.

Practical Aspects



The property of the plane to be able to denote a surface makes it useful in representing the body of 3-dimensional objects.

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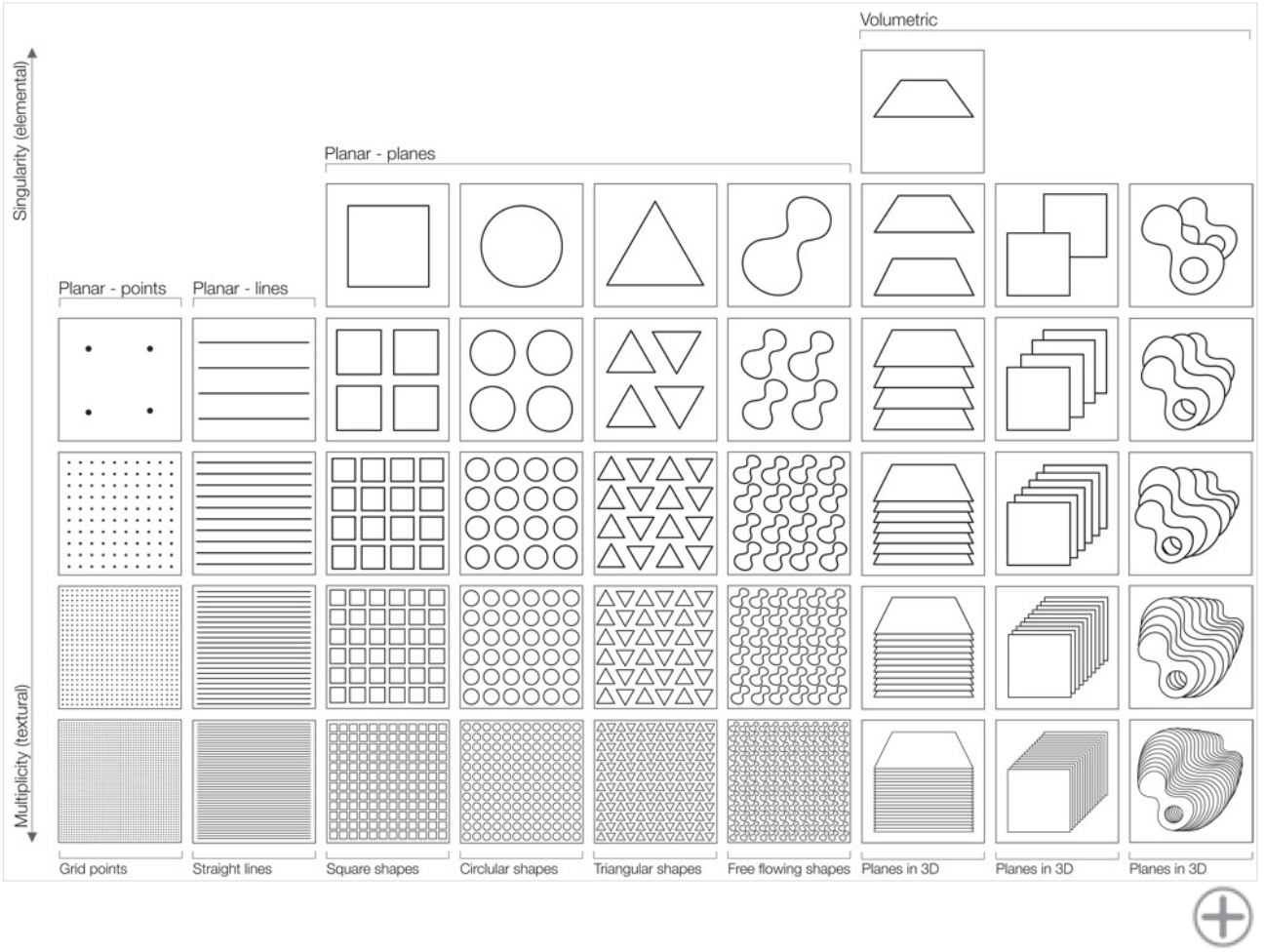
Relationship



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Example

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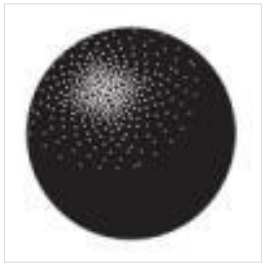
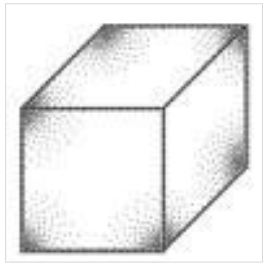
Volume

Text



Notes - Annotation



Relationship

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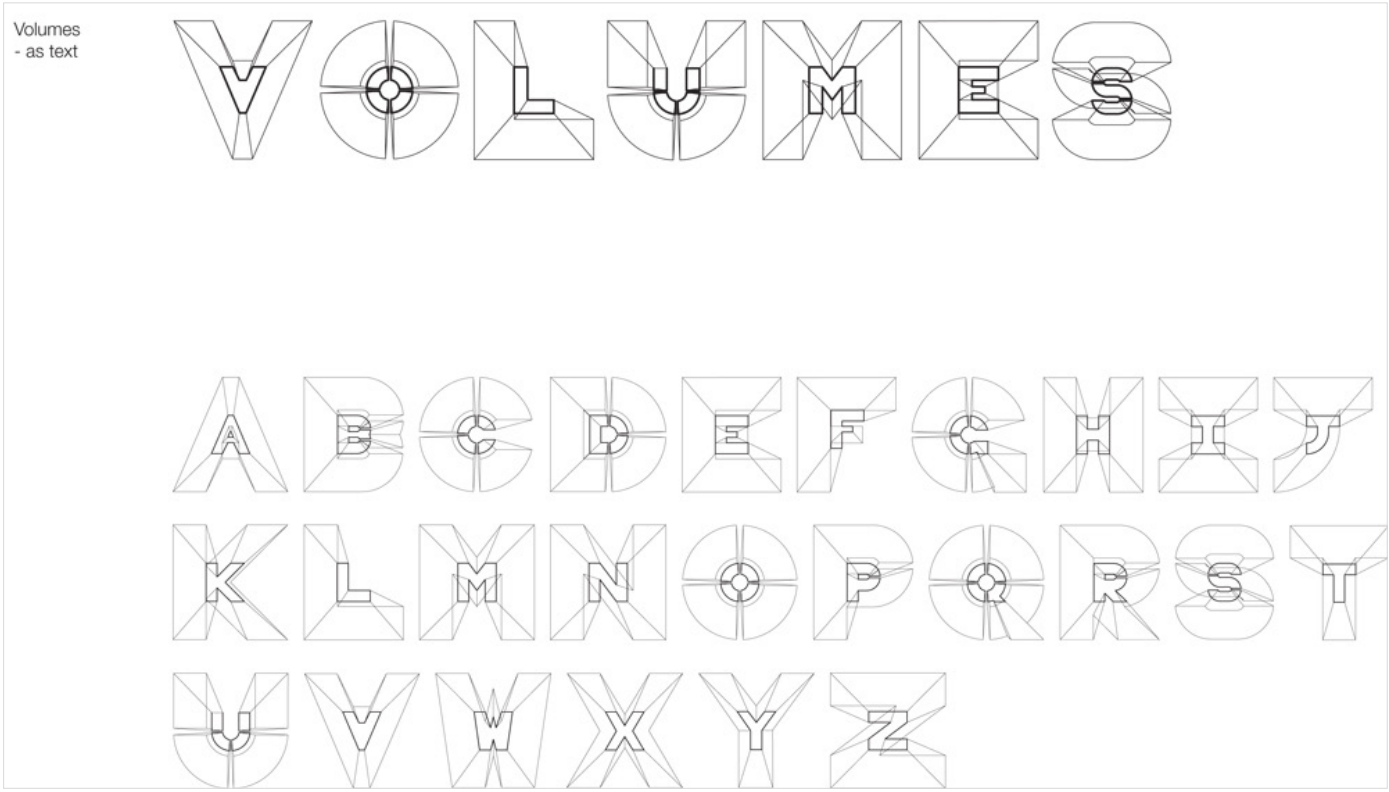
Text



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Notes - Annotation

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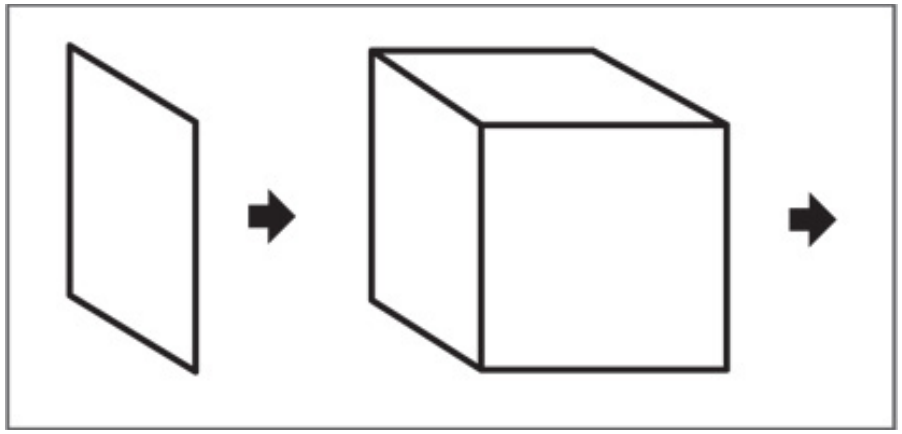
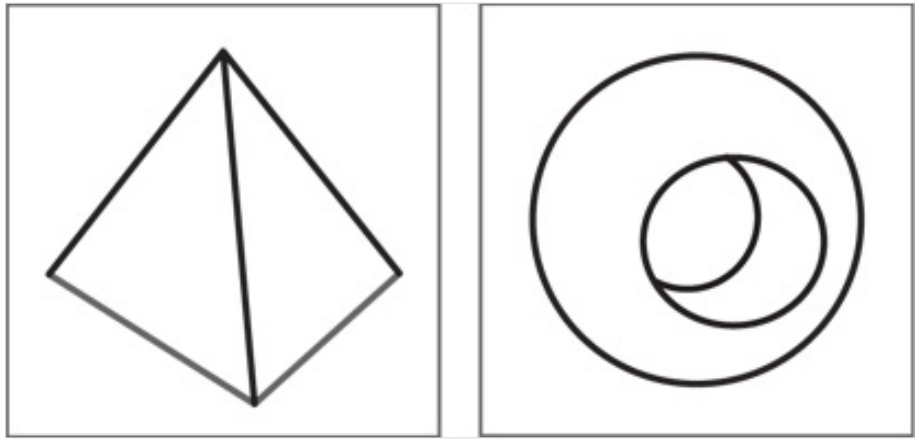


A moving plane, moving in a direction other than its own intrinsic direction gives rise to a volume.



We identify a volume because of its 3rd dimension of depth and the fact that it occupies space.

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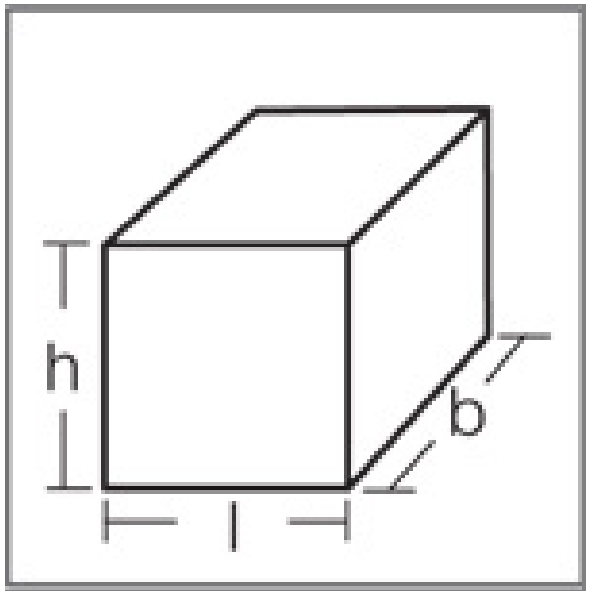
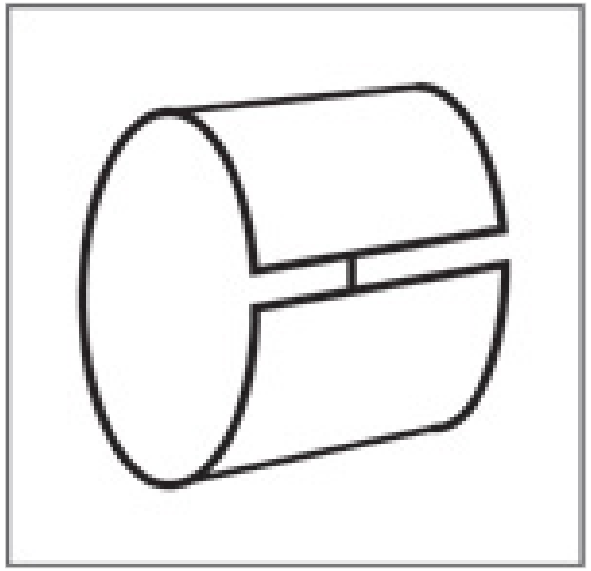


Volumes have 3 dimensions.
For example, a rectangular prism has length, breadth and height.



A 3 dimensional volume is perceived in a closed or almost closed plane.

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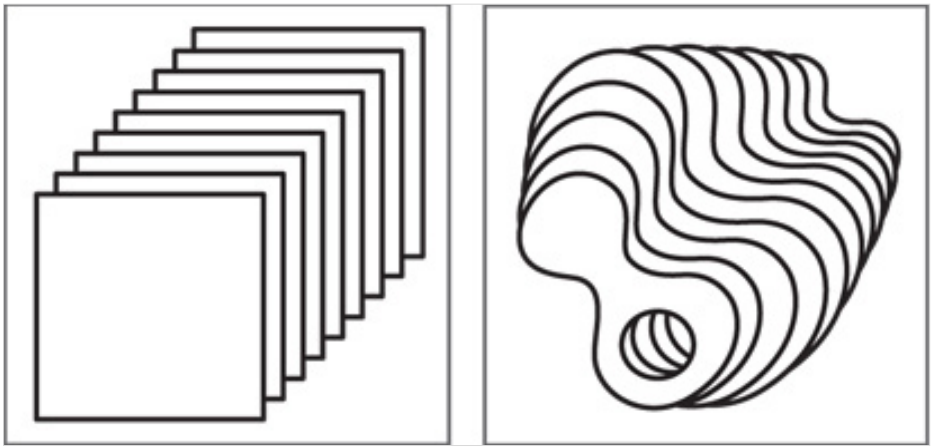

Planes that are close to each other with a common directional relationship are perceived as a volume.

Volumetric forms can be represented by means of points, lines or by means of outlines.

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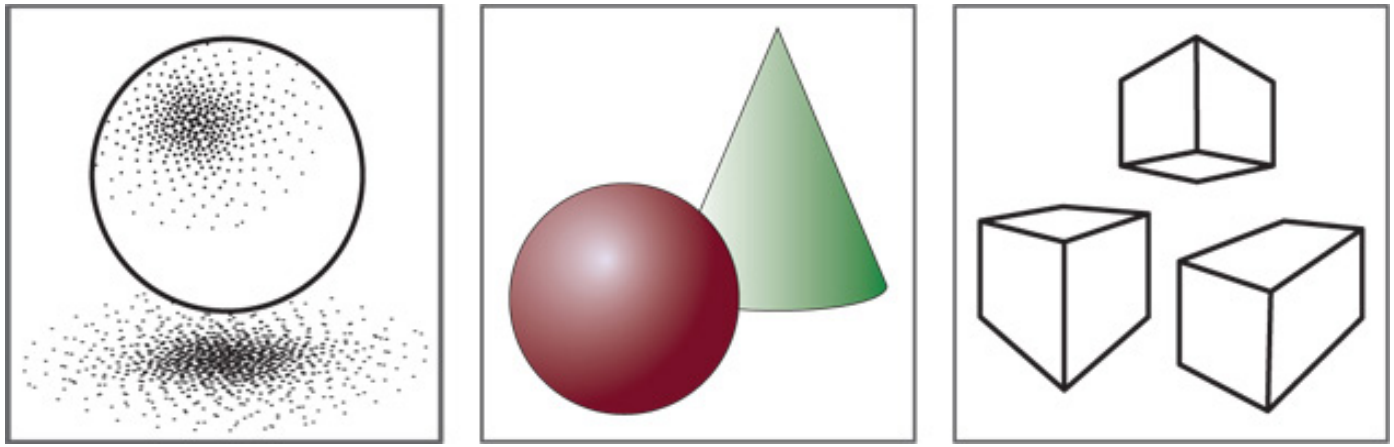

The perception of depth or volumetric space is created by using textures, shadows, changing colour values and the use of perspective.

Semantic Aspects

Volumes are 3 dimensional in nature and denote volumetric spaces.
In 2 dimensional representation of volumes, the perception of space and depth is illusory. Volumetric depictions in 2 dimensions (2D) are closest to how those objects would be perceived as in 3 dimensions (3D).

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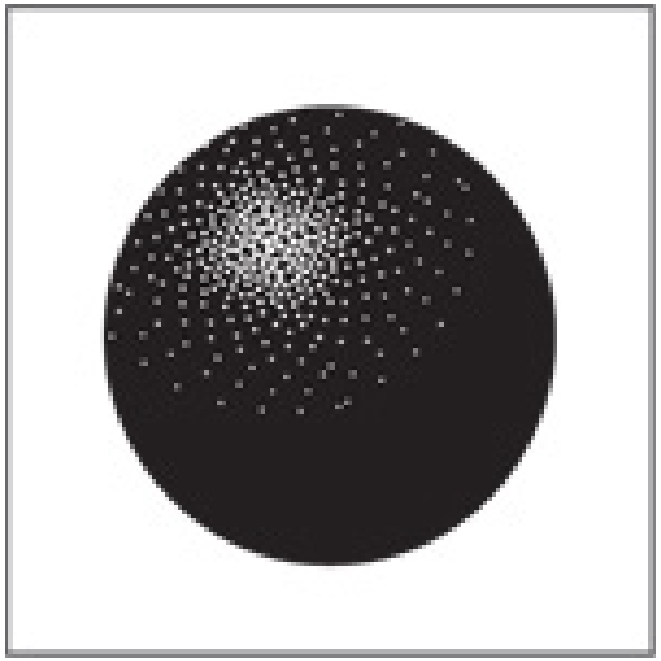
Practical Aspects



We are able to represent 3 dimensional volumetric objects as representations on a 2 dimensional surface. Examples of these are illustrations on paper, displays on monitors, images on movie screens, etc.

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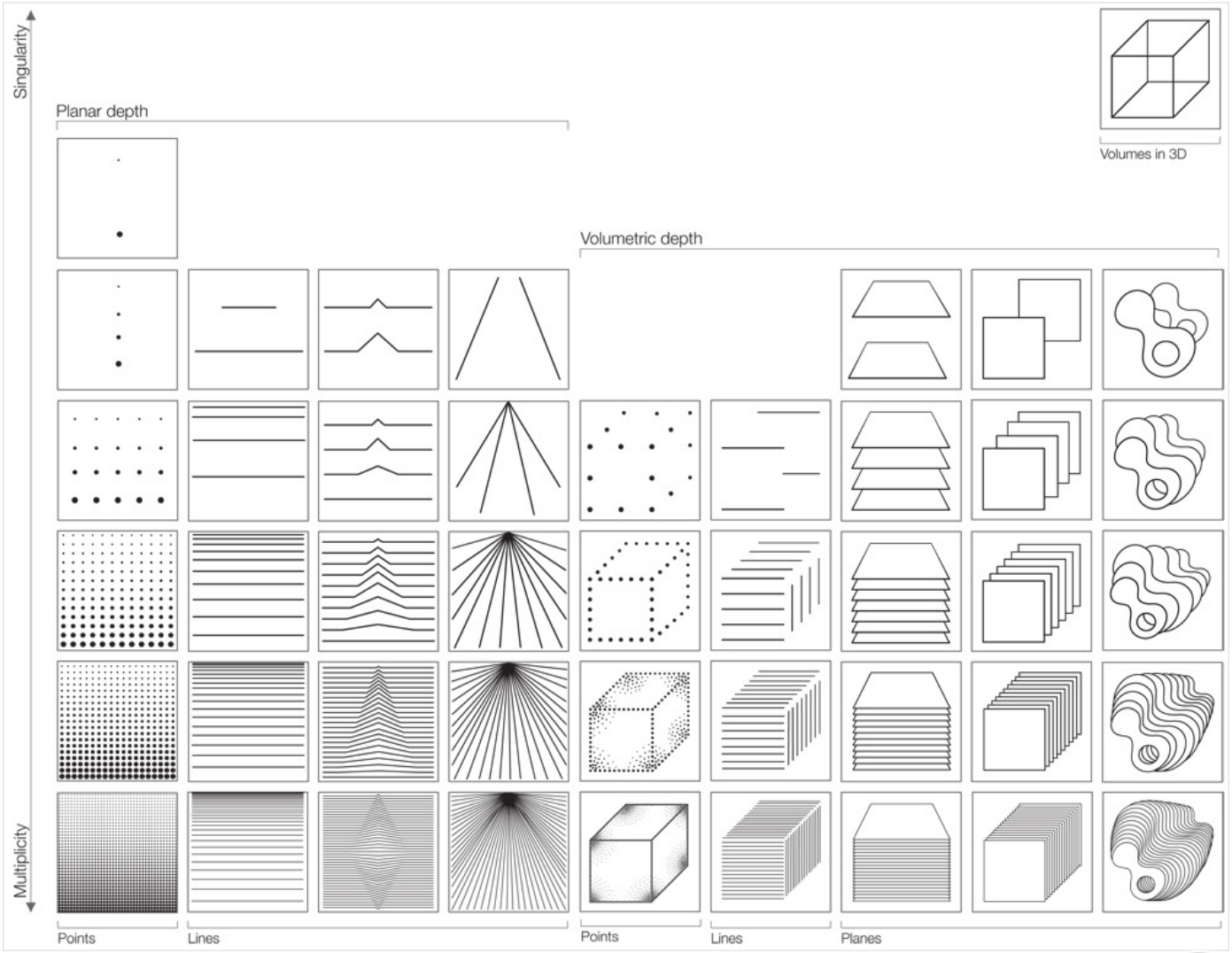

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Design Tools

Elements of Design is a design learning tool developed by IDC, IIT Bombay. It is an interactive web space where students and aspiring designers can learn about the basics of design. The tool's Overview shows us the interrelation between the elements of design - point, line, plane and volume. The elements have features like - shape, size, position, orientation, texture and colour.

Together these form the Visual features. Understanding these well is helpful for studying and applying the principles of design. A designer has to use principles of design in combinations to make a piece which functions/communicates clearly and effectively. In our tool, we learn about principles of design through two categories, structural and relational. All principles related to construction of a design are included in structural principles.

This section includes concepts such as negative and positive space, figure and ground, alignment, proportion, symmetry, repetition, grids, illusion and framing. All principles that are relative i.e. need another element to be compared with are included in Relational Principles. This section includes concepts such as movement, depth, order, hierarchy, sequence, balance, unity, emphasis contrast and variety.

For more information visit: https://dsource.in/tool/element_of_design/

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Contact Details

This documentation for the course was done by Professor Ravi Poovaiah, faculty at IDC, IIT Bombay.

You can get in touch with him at ravi[at]iitb.ac.in

You can write to the following address regarding suggestions and clarifications:

Helpdesk Details:
Co-ordinator
Project e-kalpa
Industrial Design Centre
IIT Bombay
Powai
Mumbai 4000 076
India.

Phone: 091-22-2159 6805/ 091-22-2576 7802
Email: dsource.in[at]gmail.com